Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Supporting figures:

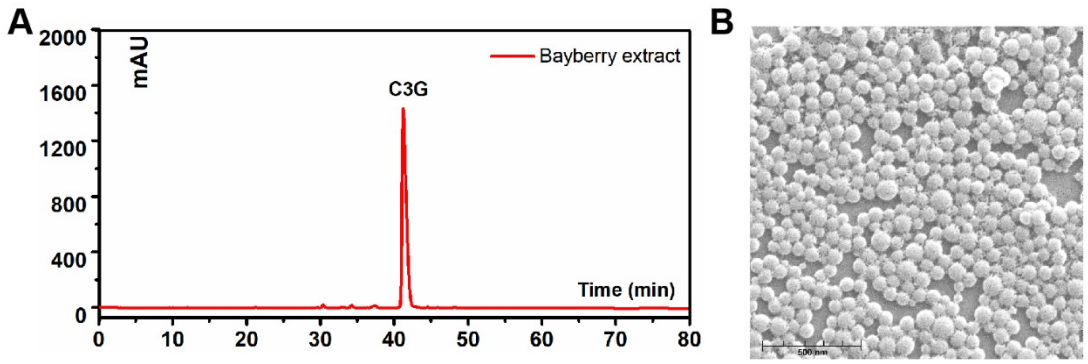

Fig. S1 (A) The UPLC profiles of bayberry extract. (B) The scanning electron microscope (SEM) image of polystyrene (PS, 80 nm).

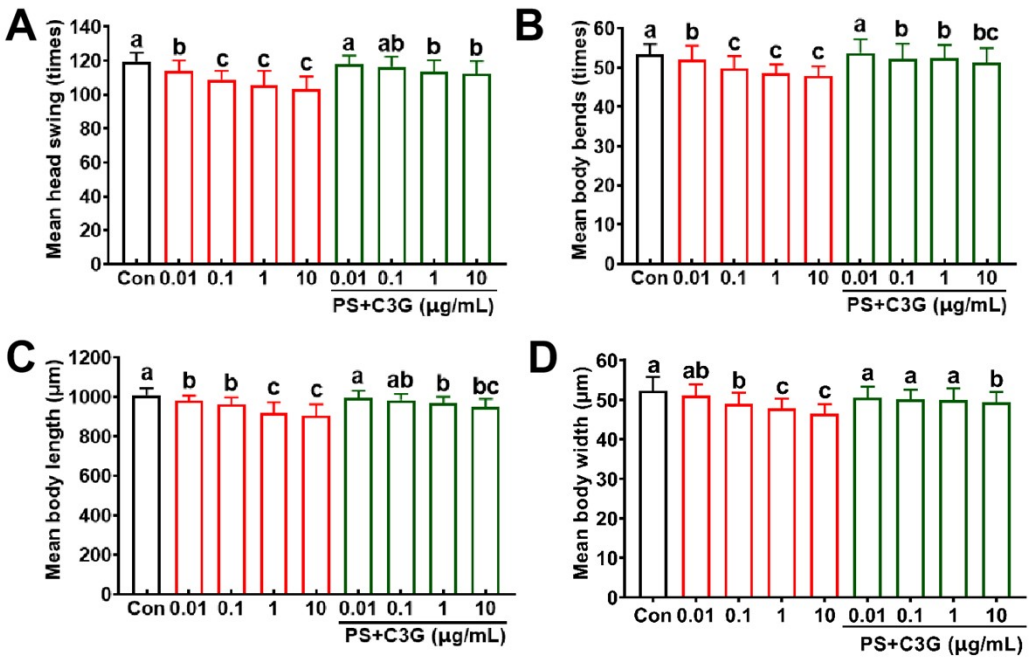

Fig. S2 C3G reduces PS-induced physiological toxicity in N2 *C. elegans* upon environmentally relevant PS exposure (0.01, 0.1, 1, 10 μg/L). (A) Mean head swing times (within 1 min) at day 22. (B) Mean body bends (within 20 s) at day 22. (C) Mean body length at day 22. (D) Mean body width at day 22. Mean body length and body width were statistically

analyzed by CAD 2019 software. Any two groups marked with different letters above the histogram represents statistically significant differences ($p < 0.05$).

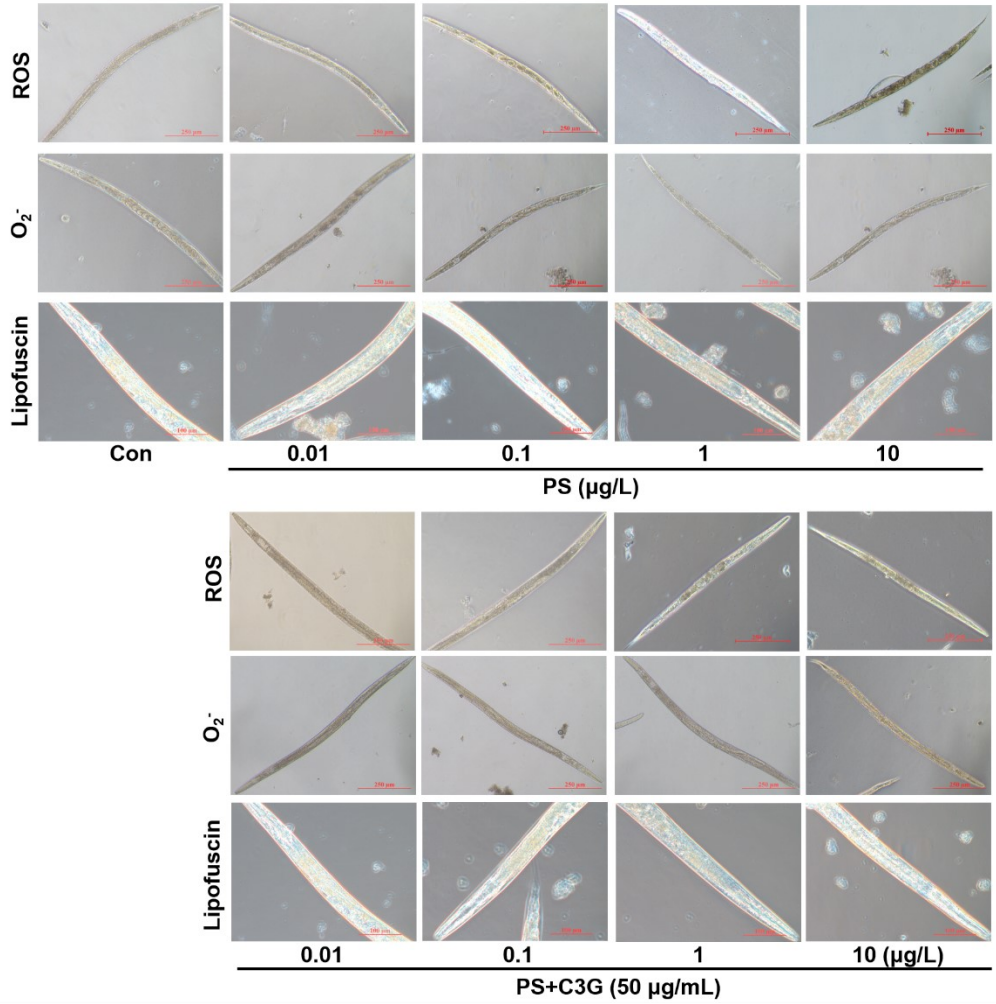

Fig. S3 The corresponding DIC images of nematodes in Fig. 2.

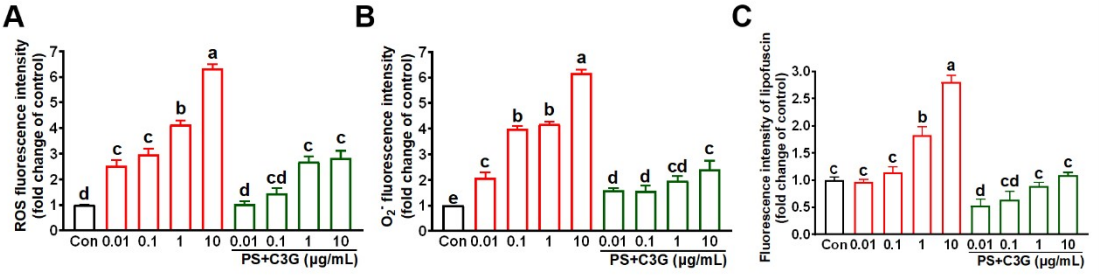

Fig. S4 The statistical analysis of ROS, O_2^-, and lipofuscin intensity in Fig. 2. The concentrations of PS are ranging from 0.01-10 μg/L, and the concentration of C3G is 50 μg/mL.

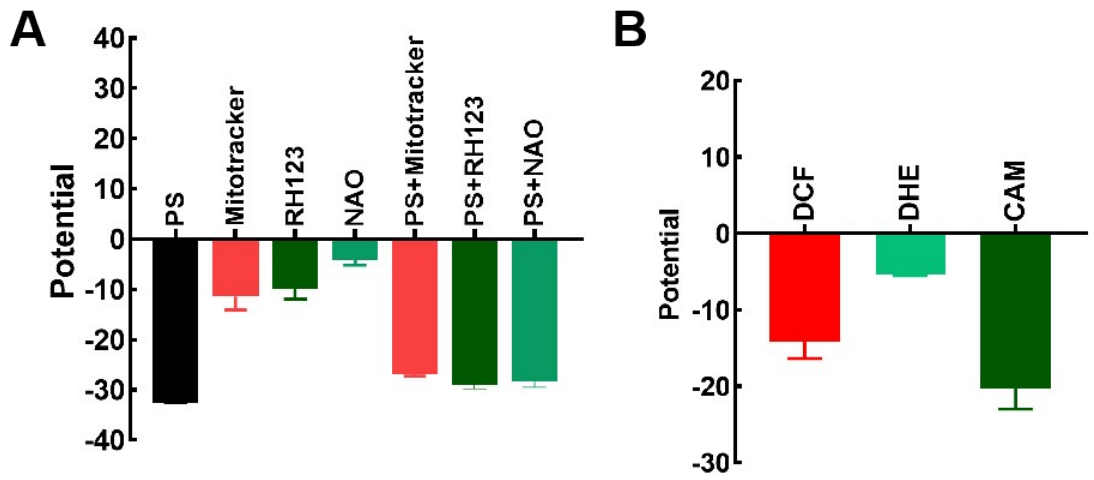

Fig. S5 The zeta potential of fluorescent probes detected with Zeta potentiometer. (A) The potential of PS, Mitotracker, RH123, NAO, PS+Mitotracker, PS+RH123, and PS+NAO. (B) The potential of DCF, DHE, and CAM probes.

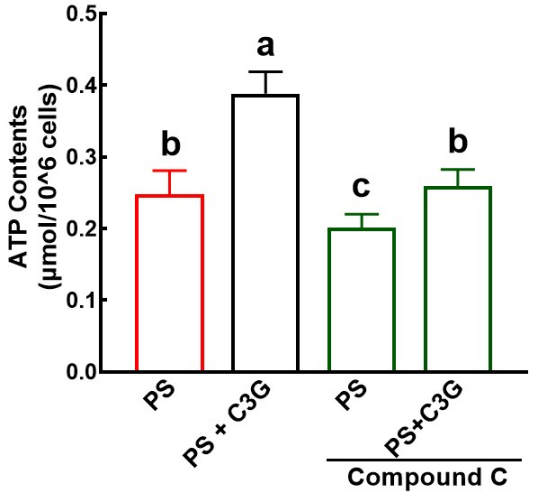

Fig. S6 ATP contents in Caco2 cells after pre-treated with inhibitor Compound C (10 μM) for 2 h. Any two groups marked with different letters above the histogram represents statistically

significant differences ($p < 0.05$).

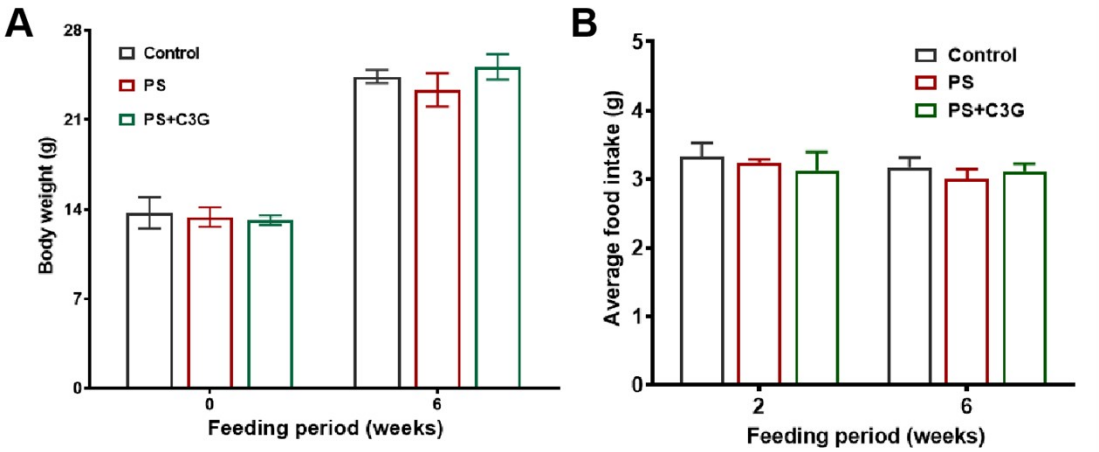

Fig. S7 The body weight and food intake of C57BL/6 mice. And n=5 for each group.